

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**FP04-062CT**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2004/019473**

International filing date (day/month/year)

**17.12.2004**

Priority date (day/month/year)

**13.02.2004**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**NTN CORPORATION**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

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Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language  
\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
  - ☐ paid additional fees under protest
  - ☐ not paid additional fees

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with
- ☒ not complied with for the following reasons:

The "special technical feature" of the invention of claim 1 relates to the point that "the ratio  $r_1$  (PCDBALL / DBALL) of the pitch circle diameter of the ball (PCDBALL) and the diameter of the ball (DBALL) is in the range  $1.5 \leq r_1 \leq 4.0$ ," the "special technical feature" of the invention of claim 8 relates to "a constant velocity universal joint in which a ball track opens in the shape of a wedge towards one direction of the axial direction, wherein a pocket of a holding receptacle has a corner radius section, and the ratio  $(R/d)$  of the curvature radius  $R$  of the corner radius section to the diameter  $d$  of the torque transmission ball is  $R/d \geq 0.22$ ." These inventions are not in a technical relationship including one or more identical or corresponding special technical features, and therefore are not found to be so linked as to form a single general inventive concept.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☒ all parts
- ☐ the parts relating to claims Nos. \_\_\_\_\_

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<b>Box No. V</b>	<b>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b>		
<b>1. Statement</b>			
Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-10	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO
<b>2. Citations and explanations:</b>			
<p>Document 1: JP 2003-130082 A (NTN Toyo Bearing Co Ltd), 08 May 2003, claim 1, Fig. 1, paragraph 0019</p> <p>Document 2: JP 9-317783 A (NTN Toyo Bearing Co Ltd), 09 December 1997, Table 1, paragraph 0022</p> <p>Document 3: JP 2000-055069 A (NSK Ltd), 22 February 2000, box 8, lines 12-24</p> <p>Document 4: JP 2002-013544 A (NTN Toyo Bearing Co Ltd), 18 January 2002, paragraph 0011, claim 5</p> <p>Document 5: JP 11-182569 A (NTN Toyo Bearing Co Ltd), 06 July 1999, claim 1, Fig. 1</p> <p>Document 6: JP 9-177813 A (NTN Toyo Bearing Co Ltd), 11 July 1997, claim 1, Fig. 1</p> <p>The inventions of claims 1-3 do not appear to involve an inventive step over document 1 and document 2 cited in the ISR. A person skilled in the art could appropriately set r1, r2, and R1 in the invention described in document 1 to the values (range) described in document 2.</p> <p>The invention of claim 4 does not appear to involve an inventive step over documents 1-3 cited in the ISR. Document 3 describes setting the contact angle to approximately 40°, and it would be easy for a person skilled in the art to apply the invention described in document 1 to the technology described in document 3.</p> <p>The inventions of claims 5 and 6 do not appear to involve an inventive step over documents 1-4 cited in the ISR. A person skilled in the art could appropriately set R/d in the invention described in document 1 to the range of values described in document 4.</p>			

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

The invention of claim 7 does not appear to involve an inventive step over documents 1-4 cited in the ISR. Document 4 describes that the lengths in the direction around the windows of the plurality of pockets corresponding to the plurality of track grooves are all equal, and it would be easy for a person skilled in the art to apply the technology described in document 4 to the invention described in document 1.

The inventions of claims 8 and 9 do not appear to involve an inventive step over document 1 and document 4 cited in the ISR. A person skilled in the art could appropriately set R/d in the invention described in document 1 to the range of values described in document 4.

The invention of claim 10 does not appear to involve an inventive step over document 1 and document 4 cited in the ISR. Document 4 describes that the lengths in the direction around the windows of the plurality of pockets corresponding to the plurality of track grooves are all equal, and it would be easy for a person skilled in the art to apply the technology described in document 4 to the invention described in document 1.